

**Part 1 General**

**1.1 REFERENCES**

- .1 Canadian General Standards Board (CGSB)
  - .1 CAN/CGSB-15.1-92, Calcium Chloride.

**1.2 DELIVERY STORAGE AND HANDLING**

- .1 Supply calcium chloride in quantities and at times required to control the spread of dust, more often if directed by Departmental Representative.
- .2 Deliver calcium chloride to site in moisture-proof bags. Indicate name of manufacturer, name of product, net weight or mass, and percentage of calcium chloride guaranteed by manufacturer.
- .3 Store bags of calcium chloride in weather- proof enclosures.

**Part 2 Products**

**2.1 MATERIALS**

- .1 Calcium chloride, Type I: to CAN/CGSB-15.1, flake.
- .2 Water: to Departmental Representative's approval.

**Part 3 Execution**

**3.1 APPLICATION**

- .1 Use of either calcium chloride or water is acceptable as means of dust control:
  - .1 Apply calcium chloride with equipment approved by Departmental Representative.
  - .2 Apply water with distributors equipped with means of shut-off and with spray system to ensure uniform application.
- .2 Do not use water during adverse temperatures.

**END OF SECTION**

**Part 1            General**

**1.1                MATERIAL**

- .1            All material to be supplied by this contractor.

**Part 2            Products**

**2.1                TOPSOIL**

- .1            Topsoil for seeded areas planting beds : mixture of particulates, micro organisms and organic matter which provides suitable medium for supporting intended plant growth.
  - .1            Soil texture based on The Canadian System of Soil Classification, to consist of 20 to 70 % sand, minimum 7% clay, and contain 2 to 10 % organic matter by weight.
  - .2            Contain no toxic elements or growth inhibiting materials.
  - .3            Finished surface free from:
    - .1            Debris and stones over 50 mm diameter.
    - .2            Course vegetative material, 10 mm diameter and 100 mm length, occupying more than 2% of soil volume.
  - .4            Consistence: friable when moist.
- .2            Screened Sphagnum Peat Moss

**Part 3            Execution**

**3.1                STRIPPING OF TOPSOIL**

- .1            Commence topsoil stripping of work scope areas after area has been cleared of brush weeds and grasses and removed from site.
- .2            Strip topsoil to depths to avoid mixing topsoil with subsoil where textural quality will be moved outside acceptable range of intended application.
- .3            Stockpile in locations as directed by Departmental Representative. Stockpile height not to exceed 2 m.
- .4            Disposal of unused topsoil is to be in an environmentally responsible manner but not used as landfill..
- .5            Protect stockpiles from contamination and compaction.

**3.2                PREPARATION OF EXISTING GRADE**

- .1            Verify that grades are correct. If discrepancies occur, notify Departmental Representative and do not commence work until instructed by Departmental Representative.
- .2            Grade soil, eliminating uneven areas and low spots, ensuring positive drainage.
- .3            Remove debris, roots, branches, stones in excess of 50 mm diameter and other deleterious materials. Remove soil contaminated with calcium chloride, toxic materials

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and petroleum products. Remove debris which protrudes more than 75 mm above surface. Dispose of removed material off site.

- .4 Cultivate entire area which is to receive topsoil to minimum depth of 100 mm. Cross cultivate those areas where equipment used for hauling and spreading has compacted soil.

### **3.3 PLACING AND SPREADING OF TOPSOIL/PLANTING SOIL**

- .1 Place topsoil after Departmental Representative has accepted subgrade.
- .2 For seeded areas, spread topsoil in uniform layers not exceeding 150 mm.
- .3 For seeded areas, keep topsoil 15 mm below finished grade.
- .4 Spread topsoil as indicated to following minimum depths after settlement.
  - .1 135 mm for sodded areas.
  - .2 300 mm for flower beds.
  - .3 500 mm for shrub beds.
- .5 Manually spread topsoil/planting soil around trees, shrubs and obstacles.

### **3.4 NEW PEAT MOSS TRENCH**

- .1 Excavate to grades indicate and as per section 31 23 10 – Excavating, Trenching and Backfilling.
- .2 Place New Sand Fill at the bottom the trench and compact to 90% of standard Proctor maximum dry density as per ASTM D698.
- .3 Place compressed screened Sphagnum Peat Moss to grades indicated.
- .4 Backfill to grades indicate and as per section 31 23 10 – Excavating, Trenching and Backfilling.

### **3.5 FINISH GRADING**

- .1 Grade to eliminate rough spots and low areas and ensure positive drainage. Prepare loose friable bed by means of cultivation and subsequent raking.
- .2 Consolidate topsoil to required bulk density using equipment approved by Departmental Representative. Leave surfaces smooth, uniform and firm against deep footprinting.

### **3.6 SURPLUS MATERIAL**

- .1 Dispose of materials except topsoil not required where directed by Departmental Representative off site.

### **3.7 CLEANING**

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**

**Part 1            General**

**1.1                RELATED SECTIONS**

- .1            Section 32 91 19.13 – Topsoil Placement and Grading.

**1.2                REFERENCES**

- .1            Ontario Provincial Standard Specifications (OPSS)
  - .1            OPSS 572-November 2003 – Construction Specification for Seed and Cover.

**1.3                SUBMITTALS**

- .1            Provide product data for:
  - .1            Seed.
  - .2            Fertilizer.

**1.4                SCHEDULING**

- .1            Schedule completion of work immediately after preparation of topsoil.

**1.5                WASTE MANAGEMENT AND DISPOSAL**

- .1            Do not dispose of unused fertilizer into sewer systems, into lakes, streams, onto ground or in locations where it will pose health or environmental hazard.

**Part 2            Products**

**2.1                GRASS SEED**

- .1            Standard Roadside Mix in accordance with OPSS 572:
  - .1            Grade Name: "Canada No. 1 Lawn Grass Mixture" in accordance with Government of Canada "Seeds Act" and "Seeds Regulations".
    - .1            Permanent grass seed mixture.
      - .1            50% to 60% Creeping Red Fescue.
      - .2            25% to 30% Kentucky Bluegrass.
      - .3            12% to 18% Perennial Ryegrass.
      - .4            2% to 4% White Clover.
- .2            Annual Nurse Crop Seed
  - .1            Fall Rye Grain or Winter Wheat Grain.
- .3            In packages individually labelled in accordance with "Seeds Regulations" and indicating name of supplier.

**2.2 WATER**

- .1 Free of impurities that would inhibit germination and growth.

**2.3 FERTILIZER**

- .1 To Canada "Fertilizers Act" and "Fertilizers Regulations".
- .2 Complete synthetic fertilizer with guaranteed minimum analysis as specified.

**Part 3 Execution**

**3.1 QUALITY OF WORK**

- .1 Do not perform work under adverse field conditions as determined by Departmental Representative.
- .2 Remove and dispose of weeds; debris; stones 50 mm in diameter and larger; soil contaminated by oil, gasoline and other deleterious materials; off site to a licensed contaminated soils disposal site.

**3.2 SEED BED PREPARATION**

- .1 Verify that grades are correct. If discrepancies occur, notify Departmental Representative and do not commence work until instructed by Departmental Representative.
- .2 Fine grade surface free of humps and hollows to smooth, even grade, to contours and elevations indicated to tolerance of plus or minus 15 mm, surface draining naturally.
- .3 Cultivate fine grade to a minimum depth of 25 mm, immediately prior to seeding.

**3.3 SEED PLACEMENT**

- .1 Sow seed uniformly at rate of:
  - .1 100 kg/ hectare.
- .2 Fertilizer Rate:
  - .1 350 kg/hectare.
- .3 Blend applications 150 mm into adjacent grass areas to form uniform surfaces.
- .4 Sow half of required amount of seed in one direction and remainder at right angles as applicable.
- .5 Incorporate seed by light raking in cross directions.

**3.4 ACCEPTANCE**

- .1 30 Day Inspection in accordance with OPSS 572 and as accepted by the Departmental Representative provided that:
  - .1 The applied cover shall be visually intact and shall form a uniform, cohesive mat.

- .2 Germination of the nurse crop shall be visibly evident.
- .2 60 Day Inspection in accordance with OPSS 572 and as accepted by the Departmental Representative provided that:
  - .1 Nurse crop evident at a mature height and evenly dispersed with uniform cover.
  - .2 Permanent seed shall show signs of germination and evenly dispersed.
  - .3 Non-seeded, non-specified vegetation shall not exceed 20% of the seeded earth area.
- .3 90 Day Inspection in accordance with OPSS 572 and as accepted by the Departmental Representative provided that:
  - .1 Permanent seed shall be at an average height of 50 mm, evenly dispersed and with uniform cover.
  - .2 No evidence of bare areas, in terms of both area and cover.
  - .3 Non-seeded, non-specified vegetation shall not exceed 20% of the seeded earth area.
- .4 Acceptance at the 90 Day Inspection will form the basis for final acceptance of the seeded areas.
- .5 Perform the following operations from the time of installation until acceptance:
  - .1 Water seeded areas in sufficient quantities and at frequency required to maintain optimum soil moisture condition to depth of 75 to 100 mm.
  - .2 Cut grass to 50 mm when or prior to it reaching height of 75 mm. Remove clippings which will smother seeded areas as directed by Departmental Representative.
  - .3 Maintain seeded areas weed free.

### **3.5 CLEANING**

- .1 Upon completion of installation, remove surplus materials, rubbish, tools and equipment barriers.

**END OF SECTION**